MEMORANDUM OF UNDERSTANDING
BETWEEN
THE CITY OF WEST LAFAYETTE
AND
THE TRUSTEES OF PURDUE UNIVERSITY
CONCERNING THE STATE STREET REDEVELOPMENT PROJECT

THIS MEMORANDUM OF UNDERSTANDING is entered into as of the _____ day of February, 2015 by and between the City of West Lafayette, Indiana ("City") and The Trustees of Purdue University (the "University") concerning the proposed redevelopment of State Street (formerly "State Route 26") from the Wabash River through the City's downtown and Purdue University's campus to U.S. 231 on the west (the "Project").

WITNESSETH:

WHEREAS, on [December 2, 2013], the Common Council of the City of West Lafayette, Indiana (the "City") approved an interlocal cooperation agreement with the Trustees of Purdue University in connection with the then recent relocation of U.S. 231 to the west of the City and the proposed annexation by the City of lands occupied by Purdue University (the "University") and the Purdue Research Foundation (the "Foundation"); and

WHEREAS, by a resolution adopted at a meeting held on January 28, 2014, the Executive Committee of the Board of Trustees of Purdue University (the "Executive Committee") approved the interlocal cooperation agreement with the City; and

WHEREAS, in approving the interlocal agreement on behalf of the Board of Trustees, the Executive Committee recognized and concurred with the observation made by the Common Council of the City that, as a result of the new U.S. 231 corridor and the City's significant partnerships with the University, the Foundation, and units of local government, the orderly growth of the City will be advantageous to the City, the entire community, and the State of Indiana; and

WHEREAS, both the Common Council of the City and the Executive Committee have recognized that, due to the proximity of the Purdue campus to the City and the important symbiosis between the campus environment and the surrounding community, the benefits anticipated by the City from the annexation will, in turn, translate into benefits to the University, particularly with regard to the ability: (a) to realize new development opportunities along the U.S. 231 corridor, and particularly in the "western lands" area where a new gateway to the University's campus is expected to be established; (b) to attract and retain students and faculty members; and (c) to improve the quality of life for them and their families both within and around campus; and

WHEREAS, pursuant to the terms of their interlocal cooperation agreement (the "Interlocal Agreement"), the University and the City have established a Joint Board composed of

representatives of both parties in order to provide a framework for ongoing collaboration on matters of mutual interest and shared responsibility following the annexation; and

WHEREAS, the Project represents a key feature of the "Perimeter Parkway" plan long contemplated by the City and the University in response to the U.S. 231 corridor project, and it has been included among the joint projects being advanced by the City and the University, in cooperation with the West Lafayette Redevelopment Commission (the "RDC"), in order to realize the benefits described above; and

WHEREAS, the Project is expected to yield significant transformational benefits by, among other things: favoring resident, student, visitor and business needs over highway transportation objectives; promoting multi-modal travel methods; encouraging economic development; and establishing a true "sense of place" for the City and the University; and

WHEREAS, an inter-agency work group representing both the City and the University has been engaged for some time now in a process of collaborating and exploring various project delivery and funding options for the redevelopment of State Street, and a basic schematic for the Project has been endorsed by the Joint Board; and

WHEREAS, the parties hereto, being mindful both of the expected benefits of the Project and the need to identify the most rapid and cost-effective means of delivering it, now desire to set forth their mutual understanding with regard to their further cooperation on activities related to the advancement of the Project, including without limitation various planning, pre-development and procurement activities necessary to establish a foundation for its successful delivery:

NOW, THEREFORE, in consideration of the premises and the mutual undertakings set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the City and the University agree as follows:

1. Project Scope and Schedule. The scope of the Project will initially be defined by reference to all of the elements of the Perimeter Parkway plan identified in the Purdue University Campus Traffic Circulation Plan Synthesis Report—State Street Corridor attached hereto as Exhibit A (the "State Street Corridor Report"), and it may also include additional elements related to development in the western lands that have been discussed by the parties. The parties will promptly take such steps as are necessary to plan and execute the Procurement (as defined below), which shall include the objective of achieving financial close by [April 30], 2016 and substantial completion of the Project by [December 31, 2018]. As the Procurement is planned and implemented, as more in-depth financial analysis is completed, and as additional input is obtained from market soundings with potential private sector participants in the Project, the parties will evaluate and decide which among the elements of the Perimeter Parkway plan and any additional elements to include in the Procurement. Any such decision will be subject to mutual agreement between the parties based on Project feasibility in terms of cost, available funding, required approvals, and other considerations.

2. **Procurement Process**. The parties will plan and structure a procurement process for the Project pursuant to the provisions of the "Build-Operate-Transfer" statute codified at I.C. § 5-23-1-1 *et seq*. (the "Procurement"). The BOT agreement that is entered into with the developer/operator at the conclusion of the Procurement will be based on an "availability payment" structure, as more particularly described in Section 4(b) below. The parties will promptly engage in market sounding opportunities to gauge interest and elicit input from the private sector on the Project, with a view toward launching the Procurement through the issuance of a request for qualifications early in the second quarter of 2015. The parties will work with their advisors on completing a high-level "value for money" analysis prior to reaching a final decision on the Procurement method and prior to entering into the Project Development Agreement (as defined in Section 5 below).

3. **Project Team**.

a. *Joint Management Team*. The parties will form an inter-agency joint management team consisting of select representatives designated by each party for the purpose of cooperating and collaborating on all activities associated with the Procurement. Should any disagreements arise between representatives of the City, on the one hand, and representatives of the University, on the other hand, the matter will be submitted to the Joint Board for resolution. In the event the Joint Board is deadlocked on the matter, the disagreement will be resolved in the manner described in the Interlocal Agreement.

b. *Advisors*. The parties will mutually agree on the selection and engagement of professional advisors to assist the joint management team in the planning, design and implementation of the Project, including with respect to the Procurement process. The parties will cooperate, through the management team, in determining who is to serve as the engaging party and in defining the scope of work of each such advisor, which will include a legal advisor (who will be engaged by and serve as counsel to the Joint Board), a technical advisor, one or more financial/strategic advisor(s), and such other advisors as the parties may mutually agree upon. It is contemplated that the technical advisor will enlist the assistance of one or more subcontractors to assist in the delivery of services related to its scope of work, and one such subcontractor will be tasked with providing staffing needs for the City related to Project monitoring and execution. Each of the parties shall be free to seek, obtain and consult with its own advisors in connection with the Project, subject to the requirement that all material decisions with respect to the Project must be made by consensus of the joint management team and, when appropriate, with the approval of the Joint Board. The joint management team will, upon the request of either party, include a party's own advisors in deliberations over material decisions about the Project.

c. *Role of RDC and the Foundation*. The parties will actively seek and facilitate the participation of the RDC and the Foundation in the preparatory work for the Project and in the process of overseeing and managing the Procurement, taking into account their mutual interest in the successful development of State Street and the western lands and their potential ability to provide funding and financial resources for the Project consistent with their respective missions. The parties will, in the Project Development Agreement (as defined in Section 5 below), provide for the reimbursement of the Foundation to the extent the Foundation advances funds related to the build-out of certain public utility infrastructure improvements required for the further development of the western lands generally, including the construction of a naturalized, re-routed Todd's Creek channel and floodplain as part of a plan to mitigate potential flooding around the site of proposed development areas along State Street.

4. <u>Funding</u>.

a. *Project Development Expenses.* Project development expenses, including but not limited to the fees and expenses of the advisors described above, will be borne equally by the parties; provided, however, that, at the direction of the joint management team, the engaging party will serve as the paying agent for a particular advisor's fees and expenses based on procedures approved by the joint management team. On a quarterly basis, the engaging party will invoice the other party for an amount equal to fifty percent (50%) of the documented fees and expenses paid by the engaging party through this mechanism. Unless otherwise agreed by the parties, the party receiving the invoice will promptly reimburse the engaging party for the amount of such invoice. The parties will provide the Secretary/Treasurer of the Joint Board with a copy of each reimbursement request and each memo evidencing payment thereof. Any amounts not reimbursed to the engaging party in respect of project development expenses borne by it will be carried on the Project records as a credit of the engaging party, to be satisfied through a reduction of its contribution to the payment obligations owed to the developer/operator in respect of the Project (starting with the first availability payment).

b. *Project Funding.* The parties intend to use an availability payment structure for the Project (i.e., one in which payments for the Project are made based on its ongoing "availability" during the term of the agreement with the developer/operator). Such availability payments will be made for a period of years following substantial completion in accordance with a schedule and performance criteria defined in the BOT agreement (and developed in part through the Procurement process). No interim or milestone payments during the design and construction phase of the Project are contemplated. The parties intend, to the fullest extent permitted by law, and to the maximum extent fiscally practicable, to use proceeds from applicable West Lafayette TIF

districts as the primary source of funds through which to make the availability payments.

i. TIF Commitments.

A. ***University***. As a material contribution to the Project, and to the extent permitted by law, the University will, and will also request that the Foundation, take such actions as are necessary to help create a funding source that can be used to cover the University's contribution to the availability payments. Subject to further discussions between the parties in connection with the preparation of the Project Development Agreement (as defined in Section 5 below), this funding source may come in the form of, among other arrangements the parties may consider: (I) a waiver of available property tax exemptions on all parcels held by the University and the Foundation in the so-called "Purdue TIF," the purpose of which would be to maximize the value of the tax increment generated in the Purdue TIF and the resulting tax revenues to be generated thereby, and/or (II) a "payment in lieu of taxes" program that would be based on a formula to be agreed upon and set forth in the Project Development Agreement. These actions would not be deemed to establish a precedent for any other future property tax obligations on the part of the University or the Foundation, would not be deemed a permanent waiver of tax-exempt status, would be based on the condition that the Purdue TIF is to be fully dedicated to funding availability payments for the Project, and would be of limited duration—in any event not to exceed the period of time necessary to ensure that the proceeds from the Purdue TIF, when combined with any funding backstop (as described below), are sufficient to cover the University's contribution to the required availability payments. The Project Development Agreement would provide a sunset mechanism for the expiration of this limited waiver and/or payment-in-lieu-of-taxes program once a specified threshold for the tax increment in the Purdue TIF has been reached.

B. ***City***. As a material contribution to the Project, and to the extent permitted by law, the City will take such actions as are necessary to commit tax revenues generated by applicable West Lafayette TIF districts, including the Purdue TIF, to make the availability payments for the Project as and when they become due after substantial completion.

ii. Funding Backstop. Subject to the approval of their respective governing bodies, and if deemed necessary based on market feedback and the advice of the Project team's financial advisor(s), each of the parties will explore the feasibility and necessity of establishing a supplemental payment mechanism to serve as a funding backstop for its contribution to the availability payments for the Project. For the sake of clarity, in the event that dedicated tax revenues from applicable West Lafayette TIF districts are insufficient to meet the availability payment for the Project in a given payment period, the parties will fund such shortfall on a 50/50 basis.

5. Additional Agreements. This Memorandum of Understanding is intended to describe the preliminary undertakings of the parties with respect to the Project and to set forth a framework for activities that are preparatory to Project commencement (including the planning of the Procurement process). The parties will proceed to negotiate a definitive project development agreement ("Project Development Agreement") that will more particularly define the Project scope and set forth the roles, rights, responsibilities and obligations of the parties, the Joint Board and the RDC with respect to cost-sharing, funding, Project management and oversight, and the conduct of the Procurement pursuant to IC § 5-23-1-1 *et seq*. To the extent (a) the Procurement requires that powers be delegated to the Joint Board and the RDC in addition to those that are already provided for in the Interlocal Agreement, and/or (b) the Project structure requires a BOT agreement having an original term longer than five (5) years in duration, the parties will seek approval of such items from their governing bodies at the time their approval of the Project Development Agreement is sought. The parties will cooperate and negotiate in good faith with a view toward executing, delivering and obtaining approval of the Project Development Agreement by no later than April 15, 2015, and in any event prior to the issuance of a request for qualifications as the official launch of the Procurement process. To the extent necessary based on the advice of counsel, the parties will cause the Project Development Agreement to be treated as an addendum to the Interlocal Agreement and to be submitted for review and approval by the Indiana Attorney General as to form and legality.

6. Term and Termination. This Memorandum of Understanding will remain in force and effect until superseded by the Project Development Agreement or until terminated by either party. Either party may terminate it upon giving thirty (30) days' advance notice to the other party. Upon termination, any Project development expenses incurred by one party for the benefit of the Project shall be invoiced and reimbursed in the manner provided in Section 4(a) above.

7. Legal Effect. Except for the obligation under Section 4(a) and Section 6 above to reimburse an engaging party for fifty percent (50%) of the Project development expenses that are borne by the engaging party as paying agent, this Memorandum of Understanding is non-binding and does not impose any legal or financial obligations or liabilities on either party. Neither party shall have any obligation with respect to the subject matter hereof unless and until the Project Development Agreement is signed by both parties.

8. **Governing Law**. This Memorandum of Understanding will be construed in accordance with the laws of the State of Indiana.

IN WITNESS WHEREOF, the parties have caused their duly authorized representatives to execute this Agreement as of the date first written above.

CITY OF WEST LAFAYETTE	**TRUSTEES OF PURDUE UNIVERSITY**
By: _____	By: _____
Its: _____	Its: _____

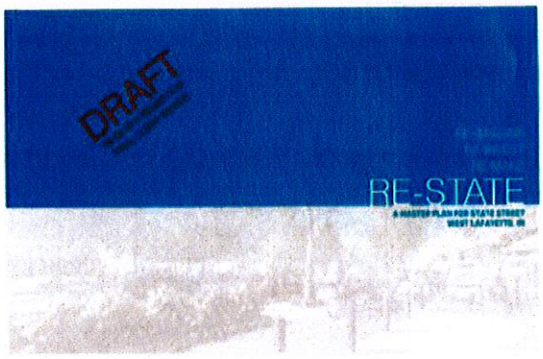
AMERICAN STRUCTUREPOINT INC

1.0 Executive Summary

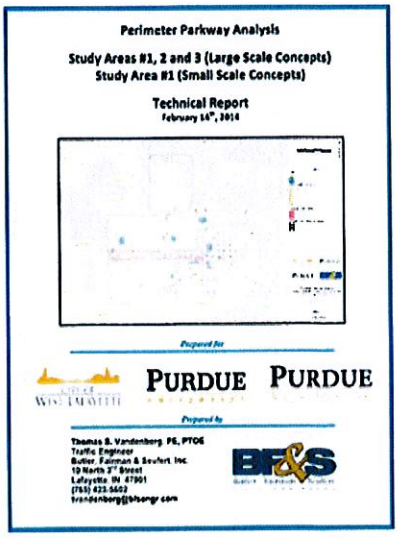
1.1 Project Purpose and Need

The purpose of this report is to synthesize the results and recommendations of numerous previous traffic studies that have been done for and around the Purdue University Campus over the past decade. Special emphasis is placed on the two most recent and relevant studies that are currently being used to define future infrastructure implementation and investment:

- *Re-State | A Master Plan for State Street prepared by MKSK (June 2014)* – This report defines a vision and strategy to re-imagine, re-invest and re-make the State Street corridor through Downtown West Lafayette, Purdue University, and a newly opened western gateway through creating a sense of place for all modes of travel.



- *Perimeter Parkway Analysis Technical Report prepared by Butler Fairman & Seufert (February 2014)* – This report forms a synthesis of the previous traffic studies and planning studies performed by PKG, HE-BFS and BFS in conjunction with the Purdue University Campus Master Plan and provides the most updated concept for the Perimeter Parkway corridor.



The need for this study was identified by Purdue University and the City of West Lafayette. The intent of this study was not to "reinvent the wheel" on a decade of efforts that have been put into various previous studies by Purdue University and the City of West Lafayette. Instead, it was to facilitate a general consensus amongst the stakeholders by providing a peer review of the proposed recommendations from the previous studies. Secondly, it was to provide value engineering solutions for various roadway segments and intersections along the core corridors of Perimeter Parkway and State Street, parts of which are under consideration for development in the next five years.

The overarching goal is to provide the University and its Board of Trustees and the City of West Lafayette a comprehensive understanding of the future scope of infrastructure improvements proposed and identified as necessary for the two corridors, with corresponding estimates of the preliminary cost/budget.

1.2 Traffic Analysis General Recommendations | State Street and Perimeter Parkway Corridors

Several past traffic studies referenced in the previous sections of this report evaluated multiple traffic scenarios for numerous intersections and roadway segments comprising the State Street and Perimeter Parkway corridors. American Structurepoint reviewed the capacity analysis files available from these studies and for the most part is in agreement with the analysis results and recommended improvement alternates along the respective corridors.

As discussed during the stakeholder progress meetings, three different sensitivity analyses were considered in developing the traffic diversion scenarios for any shift in traffic from State Street based on constructing the Perimeter Parkway. Upon consensus with the stakeholders 20%, 35% and 50% shift in traffic scenarios were identified for sensitivity analysis. The intent of the sensitivity analysis was to gain confidence in the overall operations with "what if" shifts and corresponding impacts to the reconfiguration recommendations being considered along the State Street and Perimeter Parkway corridors.

Results of the capacity analysis for existing year and the three future year sensitivity scenarios with the new traffic matrix projections based on recommended lane configurations from the previous studies showed similar intersection operations and LOS performance, with the exception of the intersection of Grant Street & State Street. A majority of the intersections will operate at an acceptable LOS (D or better) except for the intersection of Northwestern Avenue & Stadium Avenue and Northwestern Avenue & Grant Street. These intersections had a poor LOS in the previous studies as well. This is primarily attributable to the inability to construct any additional capacity improvements because of the tight right-of-way at these intersections. Exhibit 1 shows a brief summary of recommended improvements identified from previous studies and corresponding changes identified by Structurepoint based on the analysis performed for this study. A significant portion of the Perimeter Parkway corridor would operate at an acceptable level of service with a two-lane configuration and exclusive turn lanes at various intersections. Aside from the aesthetic and consistency standpoint, this could be viewed as a value engineering opportunity. The potential cost savings are discussed in detail in section 5.4 of this report.

Additional analysis was performed at the critical intersection of Grant Street & State Street to identify multiple options for consideration by the stakeholders. For the opening day scenario, keeping the geometry similar to MKSK's proposed geometry will result in LOS E during the PM peak and it also shows congestion/queuing on the WB and NB approaches. Providing a dedicated WB right-turn lane will result in a substantial reduction in congestion/queuing at this intersection and results in approach LOS's of D and E with the overall intersection LOS of D. Providing a WB right-turn lane has some merit since it can help improve the capacity for the WB thru movement that is hindered because of the WB right-turns blocking/slowing that movement in a shared lane situation. However; this comes at additional right-of-way cost which needs to be carefully evaluated by Purdue University as well as City of West Lafayette in making a final decision about acceptable operations at this intersection.

As recommended in the previous studies, it is very critical to provide proper "wayfinding and gateway signs" at the proposed new roundabouts along State Street to promote Tapawingo Drive and River Road as the eastern border of the Perimeter Parkway. Similarly, such signs should also be provided along the northern, southern and western border of the campus at the US 231 and Northwestern Avenue access points that connect to the Perimeter Parkway corridor. Proper and specific "wayfinding and gateway signs" will encourage arriving vehicles along State Street to use the correct segment to turn left or right to access various parking garages through the north or south end of perimeter parkway and it will essentially help reduce the through traffic volumes on internal core roadways, including the State Street segment.

One of the recommendations regarding wayfinding and gateway signs is to direct motorists to specific landmark buildings and parking (surface lots or garages) associated with those buildings. Specific direction should be given for visitors, and employee directions could be given separately via other internal University communication channels. It is also recommended that the University consider reevaluating parking permits for their employees and assign the employees working in certain sections of the campus to park only in the garages or the surface lots that are in the close proximity in order to ensure that the traffic patterns are evenly distributed throughout the campus. The primary purpose of this would be to divert traffic away from the State Street corridor.

Exhibit A

Exhibit 1 - Recommended Improvements Comparison between Previous Studies and Current Study

ID	Intersection	ASI Scope	Major/Minor	Existing Control	Future Control	BFS and/or MKSK Studies Recommendations	Current ASI Study Recommendations	Potential Cost Savings (Yes/No)
	State Street Corridor							
1	State Street & US 231	Yes	Major	Signal	Signal	E/W (State Street) = Proposed 6-lane section with turn lanes between Airport Rd & US 231 N/S (US 231) = Existing Configuration N/S (Airport Road) = Proposed 6 lane Section with turn lanes	E/W (State Street) = Existing 2-lane section w/turn lanes is sufficient N/S (US 231) = Existing Configuration N/S (Airport Road) = Existing 2 lane section with turn lanes	
2	State Street & Airport Road	Yes	Major	Signal	Signal or Roundabout			Yes
3	State Street & McCutcheon Dr	No	Minor	TWSC	TWSC	E/W (State Street) = Proposed 2-lane section	In agreement w/BFS and MKSK studies	No
4	State Street & McArthur Dr	No	Minor	TWSC	TWSC	E/W (State Street) = Proposed 2-lane section	In agreement w/BFS and MKSK studies	No
5	State Street & Martin Jischke Dr	Yes	Major	Signal	Signal	E/W (State Street) = Proposed 2 lane section with turn lanes N/S (Martin Jischke Dr) = 2-lane section with turn lanes	In agreement w/BFS and MKSK studies	No
6	State Street & Russell Street	No	Major	Signal	Signal	E/W (State Street) = Proposed 2-lane section with turn lanes N/S (Russell Street) = Proposed 2 lane section with turn lanes and 2-way conversion of North Russell Street	In agreement w/BFS and MKSK studies	No
7	State Street & Waldron Street	No	Minor	TWSC	TWSC	E/W (State Street) = Proposed 2-lane section with turn lanes N (Waldron Street) = Proposed 2 lane section and 2 way conversion of North Waldron Street	In agreement w/BFS and MKSK studies	No
8	State Street & University Street	No	Major	Signal	Signal	E/W (State Street) = Proposed 2-lane section with turn lanes N (University Street) = Proposed 2-lane section and 2-way conversion of North University Street	In agreement w/BFS and MKSK studies	No NOTE: Possible re-alignment of University Street for N/S connectivity between north and south sections of Perimeter Parkway (ADDITIONAL COST)
9	State Street & Marsteller Street	No	Major	Signal	Signal	E/W (State Street) = Proposed 2-lane section with turn lanes S (Marsteller Street) = Proposed 2 lane section with turn lane and 2-way conversion of South Marsteller Street	E/W (State Street) = Proposed 2-lane section with turn lanes S (Marsteller Street) = No need for 2 way conversion, keep existing section as is	Yes
10	State Street & Sheetz Street	No	Major	TWSC	Signal	E/W (State Street) = Proposed 2-lane section with turn lanes S (Sheetz Street) = Proposed 2-lane section with turn lane and 2-way conversion of South Sheetz Street	In agreement w/BFS and MKSK studies	No
11a	State Street & Grant Street	Yes	Major	Signal	Signal	E/W (State Street) = Proposed 2-lane section with turn lanes N/S (Grant Street) = Proposed 2-lane section with turn lane and 2-way conversion of North Grant Street	E/W (State Street) = Proposed 2-lane section with turn lanes N/S (Grant Street) = Keep North Grant Street as 1-way NB to avoid significant impact OR Convert North Grant Street into 2-way but close south leg to vehicular traffic (less significant impact)	
11b	State Street & Grant Street ALT	Yes	Major	Signal	Signal			No
12	State Street & Andrew Street	No	Minor	TWSC	TWSC	E/W (State Street) = Proposed 2 lane section	In agreement w/BFS and MKSK studies	No
13	State Street & Northwestern Street	No	Major	Signal	Signal	E/W (State Street) = Proposed 2 lane section with turn lanes N (Northwestern Ave) = Proposed 2-lane section with turn lane and 2-way conversion of Northwestern Ave	In agreement w/BFS and MKSK studies	No
14	State Street & Chauncey Ave	No	Major	TWSC	TWSC /Mini Roundabout	E/W (State Street) = Proposed 2-lane section with turn lanes N/S (Chauncey Ave) = Proposed 2-lane section with turn lane and 2-way conversion of Chauncey Ave	In agreement w/MKSK study recommendation to keep it as a TWSC intersection instead of a mini roundabout	No
15	State Street & Salisbury Street	No	Minor	TWSC	TWSC	E/W (State Street) = Proposed 2 lane section with turn lanes N/S (Salisbury St) = Proposed 2-lane section with right turn only from Salisbury street approaches	In agreement w/BFS and MKSK studies	No
16	State Street & River Road	Yes	Major	Signal	Roundabout	Proposed 2-lane roundabout with single exit for WB direction	Proposed 2-lane roundabout with dual exit for WB direction	No - Increase cost
17	State Street & Tapawingo Dr	Yes	Major	Signal	Roundabout	Proposed 2 lane roundabout with right-turn by-pass lane for WB direction	Proposed 2-lane roundabout - No need for right turn by pass lane for WB direction	Yes
	River Road Corridor							
18	River Road & Tapawingo Dr / Williams St	Yes	Major	Signal	Roundabout	Proposed 2-lane roundabout with 3 lane entries and 3 lane circulatory NB	Proposed 2-lane roundabout with 2 lane entries and 2 lane circulatory NB	Yes
18a	River Road & Tapawingo Dr / Williams St ALT	Yes	Major	Signal	Signal		Keep existing signal as is to minimize construction and ROW impacts	Yes
19	River Road & Fowler Avenue Ramp	Yes	Major	Signal	Signal	Major modifications identified with Roundabout Ramp terminals	Keep signalized ramp terminal and add ramp connection to accommodate SB to WB movement at Fowler	Yes
20	River Road & Wiggins St Ramp	Yes	Major	Signal	Signal			Yes
	US 231 Corridor							
21	US 231 & River Road	Yes	Major	Signal	Signal	NA	No changes to the existing configuration	No
22	US 231 & Martin Jischke Dr	Yes	Major	Signal	Signal	NA	No changes to the existing configuration	No
23	US 231 & Airport Road	Yes	Major	Signal	Signal	NA	No changes to the existing configuration	No
	South Perimeter Parkway Corridor (Harrison Street / Williams Street)							
24	Williams Street & Salisbury Street	No	Minor	TWSC	TWSC	E/W (Williams St) = Proposed 6 lane section S (Salisbury St) = Existing 2 lane section	In agreement w/BFS and MKSK studies	No
25	Williams Street & Chauncey Ave	No	Minor	TWSC	TWSC	E/W (Williams St) = Proposed 4-lane section S (Chauncey Ave) = Existing 2-lane section	In agreement w/BFS and MKSK studies	No
26	Williams Street & Grant Street	No	Minor	TWSC	Signal	E/W (Williams St) = Proposed 6-lane section N/S (Grant St) = Existing 2-lane section	In agreement w/BFS and MKSK studies	No
27	Harrison Street & Grant Street	No	Minor	AWSC	AWSC	E/W (Harrison St) = Proposed 2 lane section N/S (Grant St) = Existing 2-lane section	In agreement w/BFS and MKSK studies	No
28	Harrison Street & Sheetz Street (Williams St Realignment)	No	Minor	TWSC	Roundabout	E/W (Harrison St) = Proposed 6 lane section N/S (Sheetz St/Williams St) = Proposed 4-lane section	E/W (Harrison St) = Proposed 2-lane section N/S (Sheets St/Williams St) = Proposed 2-lane section sufficient from capacity and LOS standpoint	Yes
29	Harrison Street & Marsteller Street	Yes	Minor	TWSC	TWSC	E/W (Harrison St) = Proposed 4-lane section N/S (Marsteller Dr) = Proposed 2-lane section	E/W (Harrison St) = Existing 2-lane section would be sufficient from capacity and LOS standpoint N/S (Marsteller Dr) = In agreement with the BF&S recommendations	Yes
30	Harrison Street & University Street	No	Minor	AWSC	TWSC	E/W (Harrison St) = Existing 2-lane section wide enough for future 4 lane N/S (University St) = Existing 2 lane section	In agreement w/BFS and MKSK studies	No
31	Harrison Street & Russell Street	No	Minor	AWSC	TWSC	E/W (Harrison St) = Existing 2 lane section wide enough for future 4-lane N/S (Russell St) = Existing 2 lane section	In agreement w/BFS and MKSK studies	No
32	Harrison Street & Martin Jischke Dr	Yes	Major	Roundabout	Roundabout	Existing - No Change	Existing - No Change	No
	North Perimeter Parkway Corridor (Stadium Avenue/Northwestern Avenue)							
33	McCormick Road & Stadium Avenue	Yes	Minor	TWSC	Signal	Existing condition = 2 lane section on all approaches w/turn lanes for N/S approaches	Recommend signal installation to make it an attractive route for commuters travelling from west of campus.	No
34	Stadium Ave & University Street	No	Minor	Signal	Signal	S (University St) = Proposed 2-way conversion	In agreement w/BFS and MKSK studies	No
35	Stadium Ave & Northwestern Ave	Yes	Major	Signal	Signal	Existing - No change	Exclusive right turn lane for WB approach would improve LOS but huge ROW impact	No
36	Northwestern Ave & Grant Street	No	Major	Signal	Signal/Roundabout	Existing - No change	Converting into RAB could improve operations significantly but possible ROW impacts	No
37	Northwestern Ave & Fowler St	No	Major	Free flow	Free flow	Existing Condition - No change		
38	Northwestern Ave & Wiggins St	No	Major	Free flow	Free flow			
39	North Street & Northwestern Ave	No	Minor	TWSC	Signal	Proposed 2-lane section along all approaches with recommendation to install traffic signal	In agreement w/BFS and MKSK studies	No
40	North Street & Grant Street	No	Minor	TWSC	AWSC/TWSC	Proposed 2-lane section along all approaches with recommendation to have bus only signal for proposed SB flow on Grant Street south of North Street	Recommend utilizing the 2-way conversion on Grant Street to be open for cars and buses without a dedicated bus only lane and/or bus only signal. Recommend keeping the intersection control as TWSC with North Street stop controlled	Negligible
41	River Road & Fowler Street Ramp	Yes	Major	Signal	Roundabout/Signal	See 19 & 20		
42	River Road & Wiggins Street Ramp	Yes	Major	Signal	Roundabout/Signal			
	Note: See Appendix A & B for Conceptual Geometric Layouts from the Previous Studies							

1.3 Opinion of Probable Project Cost for State Street and Perimeter Parkway Corridors

American Structurepoint provided an opinion of probable construction cost based on the proposed plans and recommendations from the *Perimeter Parkway Analysis* and *State Street Master Plan* studies for the campus area. Since the project area involves multiple roadways and cross sections, and differing roadway characteristics; costs for each segment were generated separately. The separate costs were then grouped together based on State Street and Perimeter Parkway reconstruction costs. An alternate scenario for resurfacing Airport Road, and the McCormick Road and Stadium segments was also presented as a potential for cost savings. An additional scenario was investigated for improving State Street as a standalone project with minimal improvements to the Perimeter Parkway that are critical for State Street project. The breakdown of roadway segments, with their associated costs for all the cost options evaluated is shown in Exhibit 2. Exhibits 3 and 4 show a simplified visual layout of the project area with the overall scope summary for: a) the Full Build Option and b) the State Street Standalone Option with only critical segments of Perimeter Parkway. An overall summary of the construction cost, utilities cost, engineering design, right-of-way acquisition, and the hardscape/architectural costs for the three scope options discussed in this report are as shown below (*Note: All costs are in 2018 Dollars*):

1. State Street and Perimeter Parkway Full Build Cost Summary
   - Total Cost = $79.3M
   - Roadway Construction Cost = $56.2M
   - Hardscape/Architectural Features Cost = $5.6M
   - Utility Adjustment Cost = $3.7M
   - Land Acquisition Cost = $3.5M
   - Engineering Cost = $10.3M
2. State Street and Perimeter Parkway Resurface Alternate Cost Summary
   - Total Cost = $67.5M
   - Roadway Construction Cost = $46.1M
   - Hardscape/Architectural Features Cost = $5.6M
   - Utility Adjustment Cost = $3.7M
   - Land Acquisition Cost = $3.5M
   - Engineering Cost = $8.6M
3. State Street Standalone and Critical Segments of Perimeter Parkway Cost Summary
   - Total Cost = $62.0M
   - Roadway Construction Cost = $42.8M
   - Hardscape/Architectural Features Cost = $5.6M
   - Utility Adjustment Cost = $2.3M
   - Land Acquisition Cost = $3.5M
   - Engineering Cost = $7.8M

Exhibit 2 – Roadway Segments and Total Costs

Exhibit A

Exhibit 3 - Project Cost Overview | State Street and Perimeter Parkway Full Build

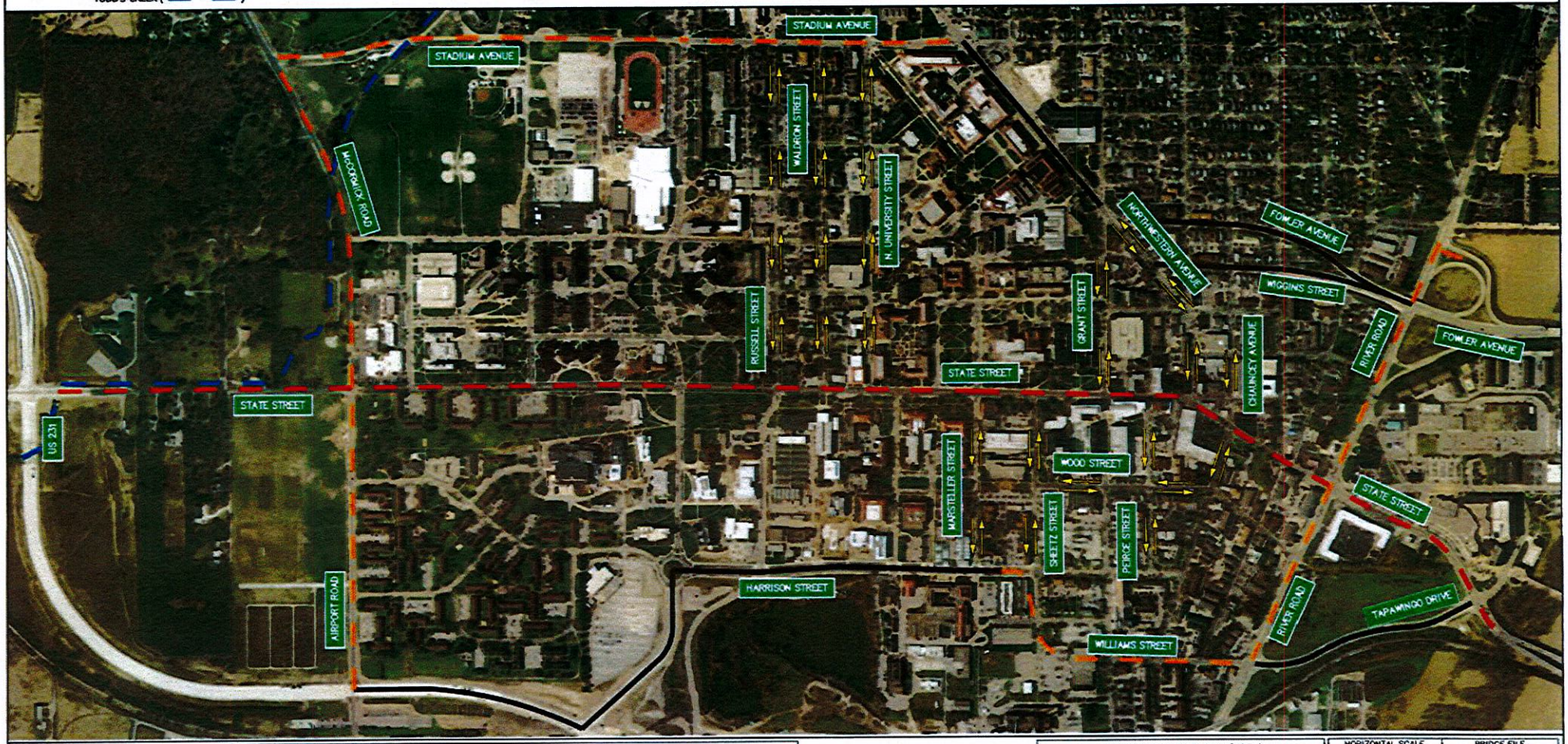
STATE STREET TOTAL COST = $46,100,000
LENGTH = 2.16 MI. (US 231 TO TAPAWINGO)
ONE-WAY TO TWO-WAY CONVERSION ( )
TODD'S CREEK ( )

+

PERIMETER PARKWAY, FULL RECONSTRUCTION, COST = $33,200,000
LENGTH = 3.10 MILES

=

TOTAL COST= $79,300,000



PURDUE UNIVERSITY
PURDUE RESEARCH FOUNDATION
CITY OF WEST LAFAYETTE INDIANA
STRUCTUREPOINT

10/30/2014

DESIGNED: NRM	DRAWN: NRM
CHECKED: MJM	CHECKED: MJM

PURDUE UNIVERSITY
CITY OF WEST LAFAYETTE

STATE STREET & PERIMETER PARKWAY
PROJECT COST OVERVIEW

HORIZONTAL SCALE	BRIDGE FILE
1" = 200'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	1 of 1
LAST UPDATED	PROJECT NO.
10/30/2014	

Exhibit A

Exhibit 4 - Project Cost Overview | State Street Standalone with only Critical Segments of Perimeter Parkway

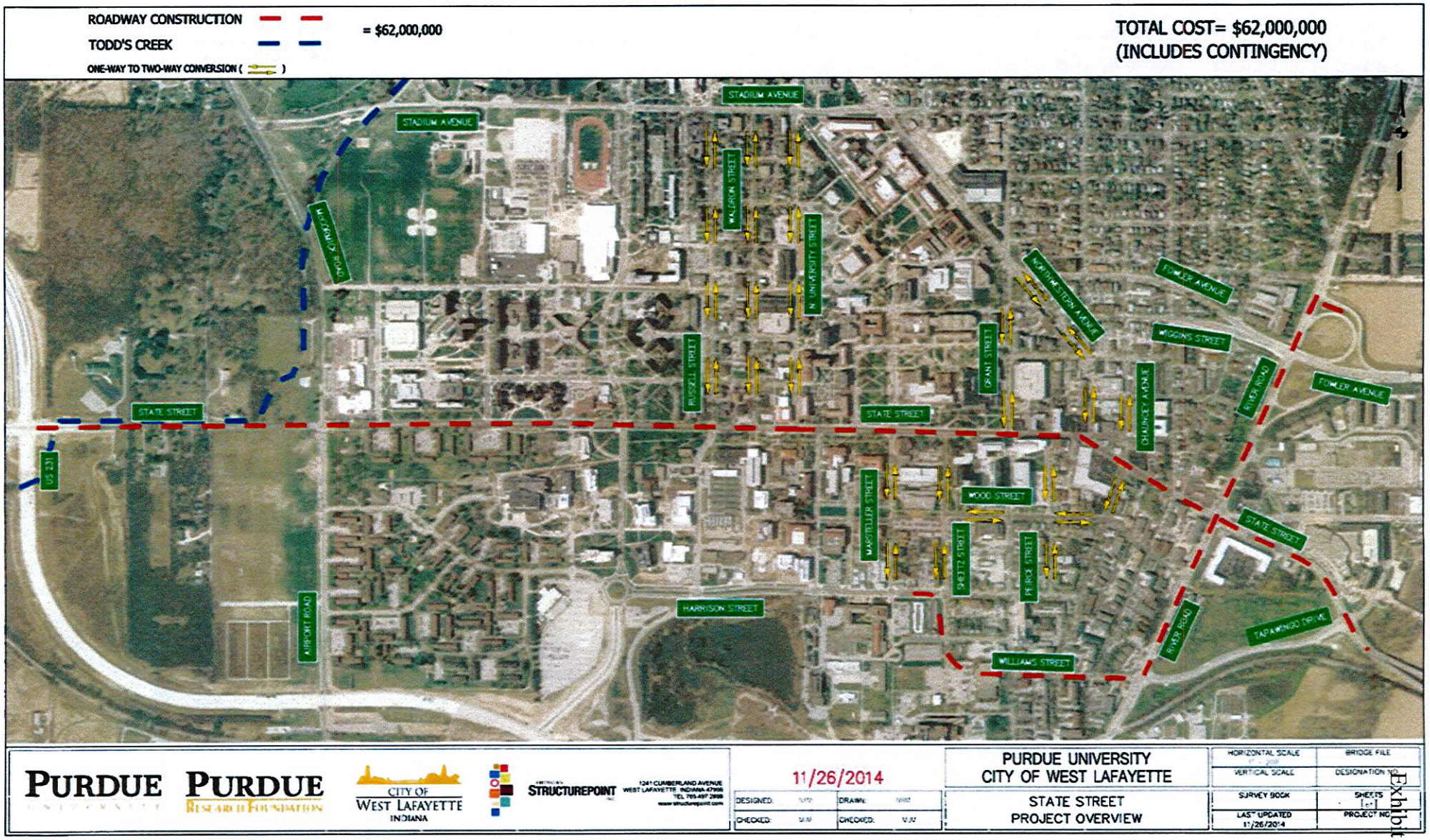


Exhibit A

1.4 Value Engineering Ideas

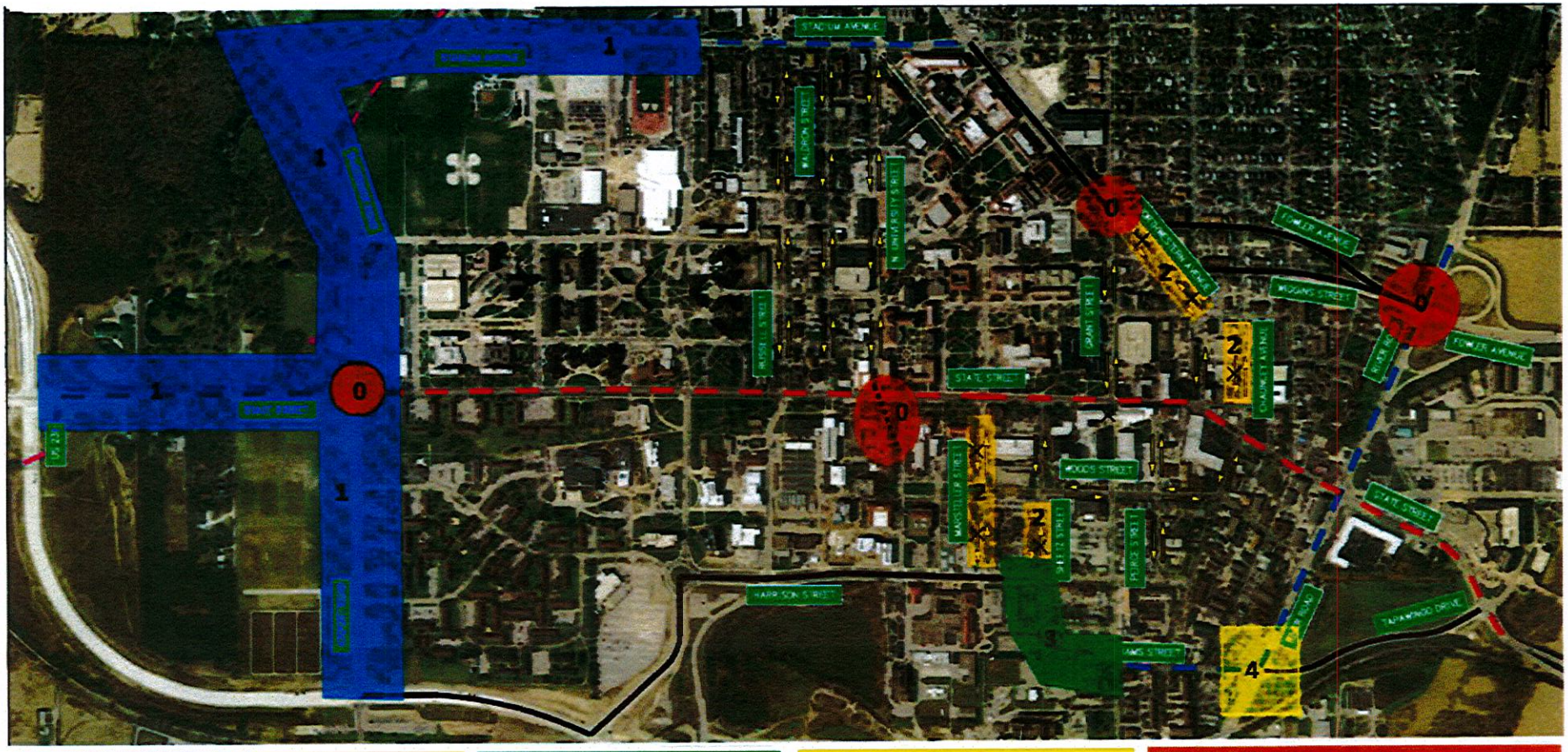
Additional options were investigated in order to reduce costs while still maintaining the functionality of the roadway segments. Exhibit 5 shows the location and additional description of value engineering items. It is anticipated that during the plan development and design phase of this project, additional value engineering options can be evaluated that could result in additional cost savings on the overall project. The following items are listed with their respective cost savings:

VE Idea	Description	Construction Cost Savings
1	Reduce Airport Road, McCormick Road, and Stadium Avenue to 2-lane sections	$2,700,000
2	Reduce number of streets converted from "One Way" to "Two Way" traffic	$500,000
3	Reduce Williams Street to a 2-lane section, and construct a single lane roundabout at Williams/Harrison & Sheetz	$1,400,000
4	Reconstruct a conventional intersection at Williams Street and River Road instead of a roundabout	*Negligible
	Total Potential Savings from Value Engineering for Full Build Option:	**$4,600,000 (~6% of Full-Build Cost)**
	Total Potential Savings from Value Engineering for State Street Standalone Option:	**$1,900,000 (~3% of State Street Standalone Cost)**

Exhibit 5 - Value Engineering Ideas

Purdue Traffic Synthesis – State Street

Cost Saving / VE Ideas



Cost Saving / VE Idea # 1:
- Reduce from 4-lane section to 2-lane section based on capacity analysis

ANTICIPATED SAVINGS = ~$2.7M

Cost Saving / VE Idea # 2:
- 2-way conversion not required based on capacity analysis

ANTICIPATED SAVINGS = ~$500K

Cost Saving / VE Idea # 3:
- Reduce from 4-lane section to 2-lane section
- Single lane roundabout at Williams/Harrisson & Sheetz

ANTICIPATED SAVINGS = ~$1.4M

Cost Saving / VE Idea # 4:
- Keep it as existing signalized intersection instead of roundabout

ANTICIPATED SAVINGS = BREAK-EVEN
QUASI-TANGIBLE BENEFITS = TRAVEL TIME SAVINGS DURING MOT, FASTER CONSTRUCTION

Potential Alternate Ideas – ADDITIONAL COST – "0"
- Single lane roundabout at State Street & Airport Road
- University Street realignment for N/S connectivity
- Dual lane roundabout at Northwestern & Grant Street
- Interchange modification at Fowler / Wiggins

Total Anticipated Cost Savings = ~$4.6M (Approx. 6% of Full Build Cost)

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Exhibit A

1.5 Proposed Construction Schedule for Standalone State Street Corridor Project

The schedule presented here is for the Standalone State Street Corridor Project which was defined as the "current scope of the project" by Purdue University and City of West Lafayette and would include all the components along the Perimeter Parkway that have been deemed critical and necessary for the State Street corridor construction. The schedule is based on a typical design/bid/build procurement model and is broken down into segments of independent utility from a construction standpoint. Each segment has the following common assumptions:

- Goal is for all construction activity to be completed by end of 2018
- All activity durations are listed in elapsed calendar days
- The traffic synthesis study report activity will be substantially completed by the end of November 2014.
- The bidding activity includes the advertisement, bidding, and contract award process taking 60 days.
- Preference to maximize construction activity during Purdue University's summer sessions which are mid-May to mid-August time period, and to avoid traffic and pedestrian disruptions during other time periods as much as possible.
- Assumes an accelerated land acquisition process, when noted, through the use of a right-of-way incentive program similar to one utilized by the Indiana Department of Transportation (INDOT). The incentive program is designed and intended to provide motivation to the property owner to sign and accept an offer to purchase, and all conveyance documents, within 30 calendar days of receiving the offer. This program offers the property owner a 10% incentive payment for acquisition of needed right-of-way in exchange for accepting an offer within 30 days. This program also includes a 10% incentive payment for parcels requiring relocation if the tenant relocates in less than 90 days.
- Assumes no federal funding involved in the project except as noted below for the Williams Street construction from Harrison Street to Grant Street.

It is highly recommended that field survey be performed soon in order to initiate the development of design plans and begin construction in a timely manner to achieve the goal of completion of construction by end of 2018. A detailed CPM schedule and a color coded visual map are shown in Exhibits 6 & 7.

Exhibit 6 - Detailed CPM Schedule for Traditional Design Bid Build Procurement Model

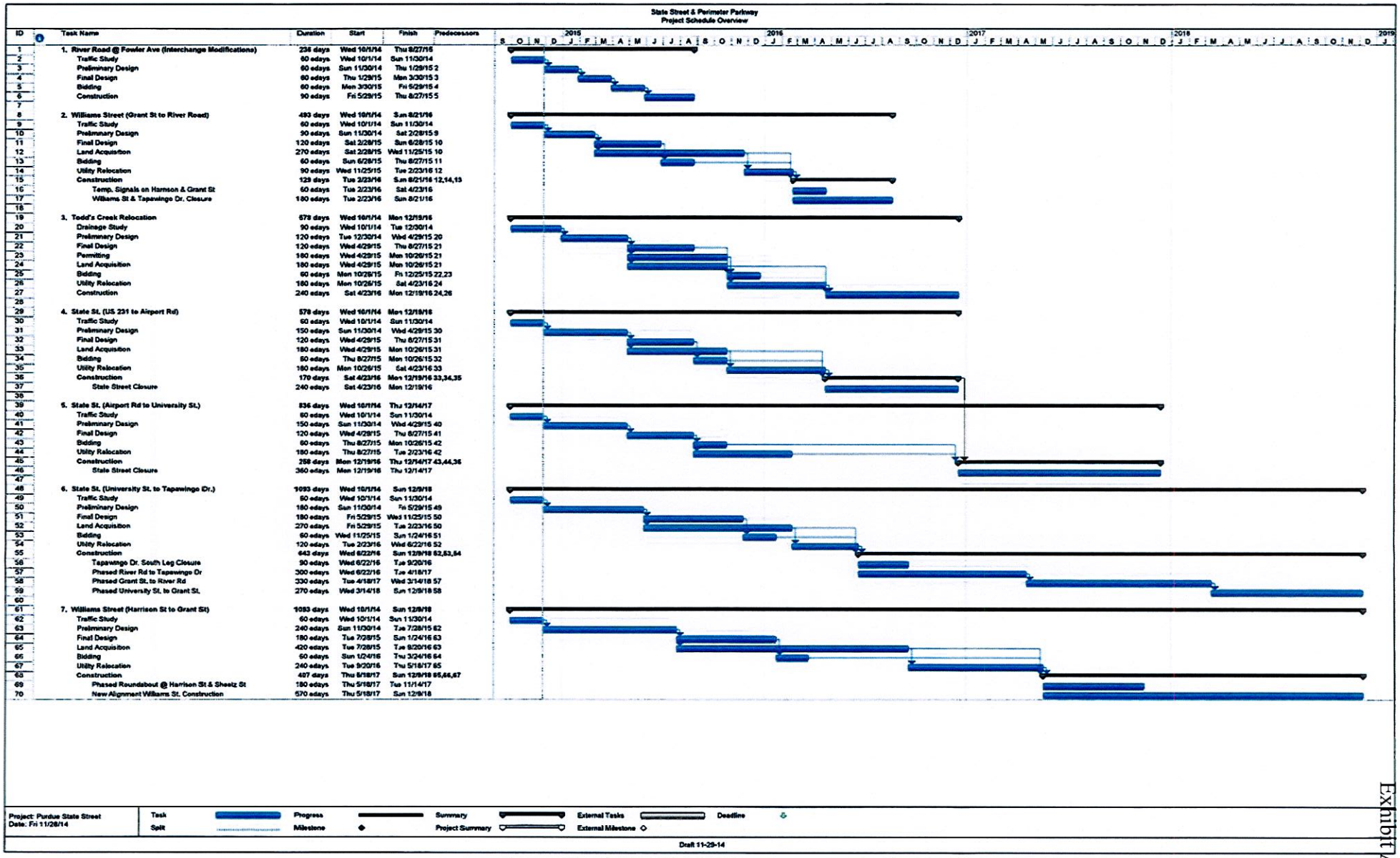
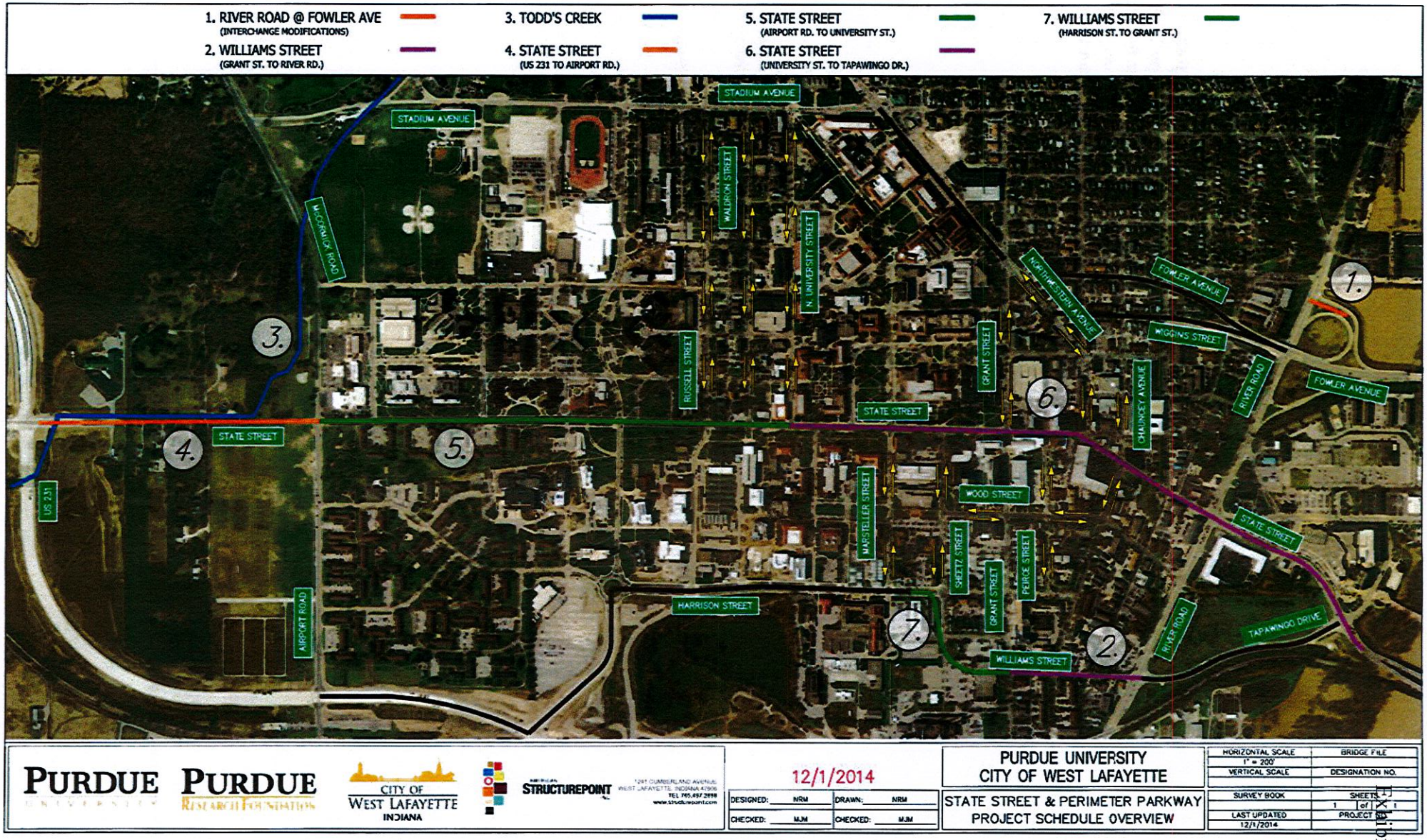


Exhibit A

Exhibit 7 - Visual Map Summarizing Segments/Tasks to match CPM Schedule



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12/1/2014

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CHECKED:	MJM	CHECKED:	MJM

PURDUE UNIVERSITY
CITY OF WEST LAFAYETTE

STATE STREET & PERIMETER PARKWAY
PROJECT SCHEDULE OVERVIEW

HORIZONTAL SCALE 1" = 200'	BRIDGE FILE
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS 1 of 1
LAST UPDATED 12/1/2014	PROJECT

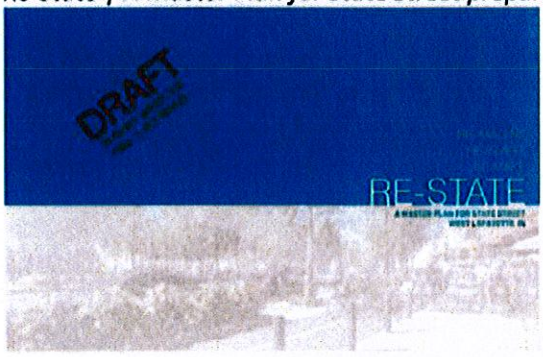
Exhibit A

AMERICAN STRUCTUREPOINT INC

2.0 Project Scope with Purpose and Need

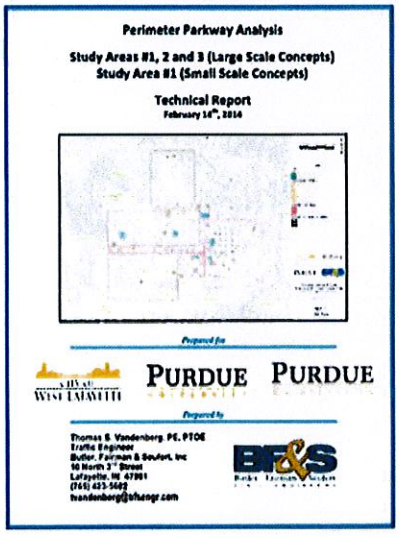
Purdue University selected American Structurepoint, Inc. to develop a synthesis report for campus traffic circulation on the Purdue University campus in West Lafayette, Indiana. The primary objective of this report was to review and evaluate results and recommendations from numerous previous traffic studies that have been done for and around the Purdue University Campus over the past decade. Special emphasis has been placed on the two most recent and relevant studies that are currently being used to define future infrastructure implementation and investment:

- *Re-State | A Master Plan for State Street prepared by MKSK (June 2014)*



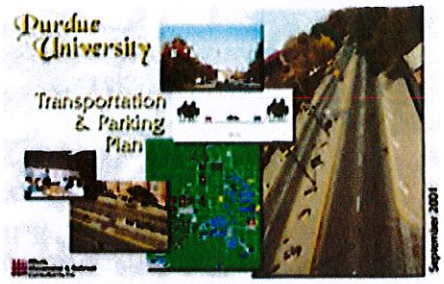
This report defines a vision and strategy to re-imagine, re-invest and re-make the State Street corridor through Downtown West Lafayette, Purdue University, and a newly opened western gateway through creating a sense of place for all modes of travel.

- *Perimeter Parkway Analysis Technical Report prepared by Butler Fairman & Seufert (February 2014)*



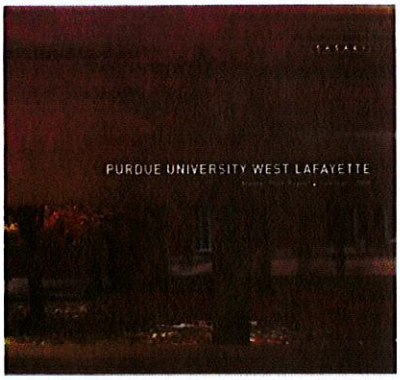
This report forms a synthesis of the previous traffic studies and planning studies performed by PKG, HE-BFS and BFS in conjunction with the Purdue University Campus Master Plan as shown below:

- *Transportation and Parking Master Plan prepared by PKG (2001)*

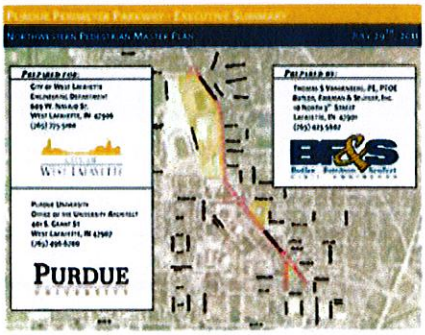


- *PKG Transportation and Parking Master Plan Evaluation prepared by HE-BF&S for City of West Lafayette (2003)*

- *Purdue University West Lafayette Master Plan Report prepared by Sasaki (2009)*



- *Northwestern Pedestrian Master Plan prepared by BF&S (2011)*



The primary objective of this report is to review and evaluate recommendations from these past studies for various roadway segments and intersections, especially major intersections along the State Street and Perimeter Parkway corridors. The intent of this study was not to "reinvent the wheel" on a decade of efforts that have been put into various previous studies by Purdue University and the City of West Lafayette. Instead, it was to facilitate a general consensus amongst the stakeholders by providing a peer review of the proposed recommendations from the previous studies. Secondly, it was to provide value engineering solutions for various roadway segments and intersections along the core corridors of Perimeter Parkway and State Street, parts of which are under consideration for development in the next five years.

The overarching goal is to provide the University and its Board of Trustees and the City of West Lafayette a comprehensive understanding of the future scope of infrastructure improvements proposed and identified as necessary for the two corridors, with corresponding estimates on the preliminary cost/budget.

The rough boundary of the study area evaluated and currently under consideration for future improvements is as described below and shown in Figure 1:

- Stadium Avenue/Northwestern Avenue to the north
- Airport Road/McCormick Road/US 231 to the west
- US 231/Martin Jischke Drive/Harrison Street/Williams Street to the south
- River Road to the east
- State Street corridor between Wabash River and US 231

American Structurepoint, Inc. developed this synthesis report under the guidance and joint efforts of the following stakeholders:

- Purdue University
- City of West Lafayette
- Purdue Research Foundation (PRF)

The scope of this study generally includes:

- Identifying any gaps or any missing information in previous studies that is essential for the overall review of the improvement program and that is necessary to validate that the overall transportation network within the study area (as well as the study intersections) will operate acceptably.
- Perform traffic data collection and traffic capacity analysis with three sensitivity checks for the major intersections within the State Street and Perimeter Parkway corridors to confirm previously recommended lane configurations, traffic control, and operational performance at these major intersections. Figure 2 shows the major study intersections.
- Review and compute the project preliminary construction cost that has previously been estimated for both the Perimeter Parkway and the State Street corridor based on the scope defined under the two core studies. The estimates will also include verification of utility relocation, land acquisition, engineering services, and inflation costs.
- Computations of the preliminary construction cost estimates for any proposed changes recommended under this synthesis report, which may be different from the previous recommendations.
- Provide a general overview for a Transportation Management Plan (TMP), with recommendations for construction phasing/sequencing as well as a project delivery plan. Include recommendations that provide value from a cash flow, procurement, and sequencing of construction standpoint with pros and cons for the conventional design bid build construction contract vs. public private partnership type contract.

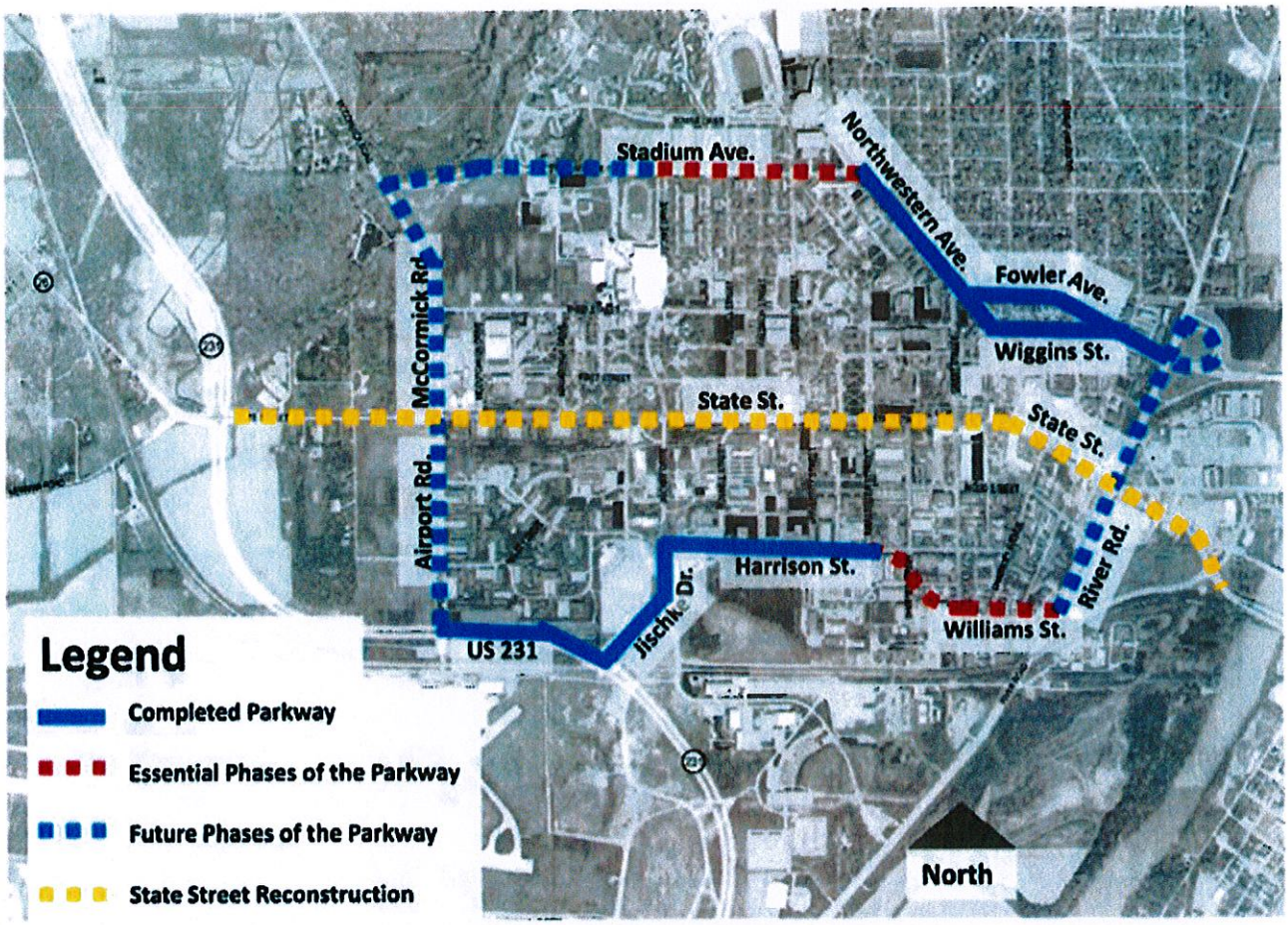


Figure 1 – Project Study Area (Perimeter Parkway and State Street Corridors)

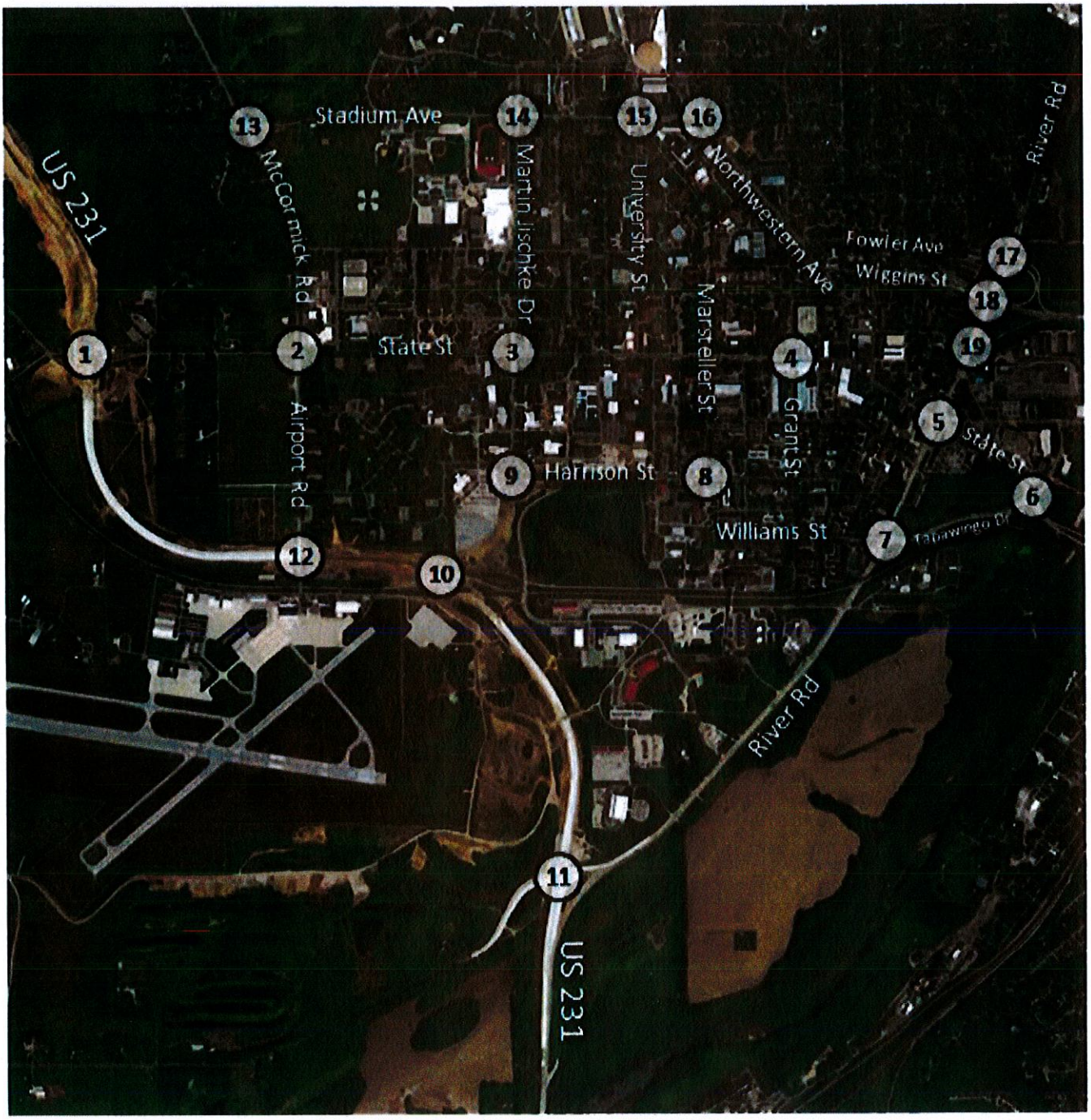


Figure 2 – Major Study Intersections